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ABSTRACT

The easiest way for a content area teacher to find how effectively students can read materials assigned in class is to design a teacher-made inventory, using the materials to be read and studied by the students, called a Textbook Usage Inventory. Reading skills and resources that should be incorporated in the inventory include literal skills, interpretive skills, critical skills, creative skills, classroom resources, and library resources. An identification of these skills can be made into a checklist for determining the types of comprehension and reference questions asked. The inventory should include a total of 35 to 40 questions. When administering the inventory, the teacher should explain the purpose of the inventory to the students and assure them that no grade will be assigned on the inventory, but that the results will be shared with them. The inventory evaluation can be used as a class activity in which each student scores his or her own paper. A student would be considered deficient in any one specific skill if he or she answered more than one question incorrectly when there are at least three questions measuring a specific skill. (A sample content area checklist, a basic outline for constructing an inventory, examples of inventory items, and an evaluation sheet are included.) (HOD)

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# TEXTBOOK USAGE INVENTORIES

## (4-12)

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DIVISION OF READING EFFECTIVENESS

INDIANA DEPARTMENT OF PUBLIC INSTRUCTION

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## TEXTBOOK USAGE INVENTORIES (4-12)

The textbook used in a given content area generally is the single most-often-used source of written information. Since this is the case, a teacher is well-advised to find out early in the year how well students can function within the text. Prior to beginning actual instruction, the teacher needs to discover if students do indeed know how to use their texts. This, in turn, will assist the teacher in planning instruction which takes into account students' proficiency or lack of proficiency with their texts.

The easiest way for a content area teacher to find how effectively students can read materials assigned in class is to design a teacher-made inventory, using the materials which are to be read and studied by the students. This type of informal survey is called a Textbook Usage Inventory (TUI). A group inventory of this kind can be devised for each content area to determine a student's competency in such skills as the ability to respond to a variety of comprehension questions and to use the parts of the book, supplementary reference materials, content area vocabulary and various classroom survival skills such as notetaking, skimming and outlining.

A teacher-made Textbook Usage Inventory serves as a tool for the implementation of the diagnostic/prescriptive concept of instruction based upon assessed student needs. This type of inventory has the following advantages.[1]

1. It provides on-the-spot diagnosis of the student's competency with the materials to be used in the classroom.

[1] David L. Shepherd, Comprehensive High School Reading Methods (Charles E. Merrill Publishing Co., 1973).

2. The survey is easily conducted by each content area teacher as a group experience, thus avoiding the possible inconvenience of school-wide scheduling.

3. This type of informal skill diagnosis assists the teacher in determining the focus for classroom instruction. Since the questions on the inventory reflect the style and expectations of subsequent classroom instruction, a bridge is provided from diagnosis to prescription.

4. The scoring of the inventory is expressed in terms of competency or non-competency, rather than by grade. This affords the teacher the opportunity to measure needs in terms of strengths and weaknesses.

5. The results from the inventory provide the opportunity for close communication between the teacher and student concerning an analysis of the student's particular strengths and weaknesses. Through this channel the teacher can then assist the student in determining his/her study needs.

6. Students correct their own papers in class. This provides the opportunity to discuss the answers and to evaluate the reasons for incorrect responses. In this way, some teaching may be done informally, e.g., the use of the index or glossary.

The Textbook Usage Inventory is an effective survey for assessing the student's ability to read the required materials used in a given content area course. It serves as a helpful tool for the content area teacher in the implementation of an approach to teaching which will best communicate the content to all students.

The following pages will outline a simple procedure for constructing and using a TUI. The directions for this instrument are easily adapted for any content area. Before beginning to construct a TUI, the teacher will find it helpful to use the checklist on the following page to identify those reading skills and resources which are incorporated into his/her content.

Content Area Checklist for Reading Skills and Resources

## LITERAL SKILLS

_____Recalling facts
_____Recognizing stated main ideas
_____Summarizing stated ideas
_____Organizing information into given categories
_____Locating specific information
_____Sequencing events
_____Following directions
_____Identifying stated character traits

## INTERPRETIVE SKILLS

_____Making inferences
_____Drawing conclusions
_____Generalizing
_____Seeing organization
_____Making associations
_____Predicting outcomes or behaviors
_____Interpreting maps, pictures graphs, diagrams
_____Summarizing main ideas not stated
_____Comparing and contrasting
_____Interpreting implied character traits
_____Understanding symbols

## CRITICAL SKILLS

_____Recognizing propaganda
_____Making judgments
_____Evaluating
_____Researching
_____Analyzing data
_____Checking validity

## CREATIVE SKILLS

_____Applying what is learned to new situations
_____Manipulating and restructuring beliefs
_____Internalizing new information and extending its use
_____Generating new ideas
_____Establishing an emotional response to content

## CLASSROOM RESOURCES

_____Textbooks
_____Illustrations
_____Charts, tables, graphs
_____Diagrams
_____Dictionaries
_____Rule book or manuals
_____Ditto sheets
_____Directions
_____Signs
_____Patterns
_____Blueprints
_____Recipes
_____Globes
_____Slide rule
_____Measurement devices

## LIBRARY RESOURCES

_____Card catalogue
_____Vertical files
_____Encyclopedias
_____Readers' Guide
_____Who's Who
_____Almanac, yearbooks
_____Atlas
_____Newspapers
_____Magazines
_____Cartoons
_____Pamphlets
_____Catalogues
_____Bibliographies
_____Fiction
_____Biographies
_____Autobiographies
_____Play scripts
_____Poetry

## Constructing a Textbook Usage Inventory

A basic outline for constructing a Textbook Usage Inventory is given below. Adapt this outline to the content area being tested based upon the materials and instructional techniques the teacher plans to utilize for instruction. Use items checked on the preceding page under "literal, interpretive, critical and creative skills" in determining the types of comprehension questions asked following the reading passage. Take care that questions from each level are included. Use the items checked under "classroom and library resources" to determine the questions included in the reference skills section. A total of 35-45 questions should be sufficient. Approximate proportions are suggested in the outline given below. Keep in mind that all the sections listed below are not applicable to all content. Determine which types of questions best apply to your content and include those in the inventory.

1. Parts of the Book (4 questions)
   a. Table of contents and index
   b. Listing of maps and other visuals
   c. Glossary
   d. Biographical data
   e. Introductory and summary paragraphs

2. Reference Skills (5 questions)
   a. These should cover any reference books to which the teacher would direct the student. See checklist items.
   b. Library card catalogue
   c. Vertical files
   d. Maps, charts, diagrams, graphs, pictures in the text

3. Vocabulary Skills (18-21 questions)
   a. General background of word meanings (7-8 questions)
      (1) Students select correct meanings for basic course vocabulary from several listed meanings.
      (2) Students define a term in their own words.
      (3) Students use a word in a sentence clearly indicating its meaning.
      (4) English teachers might want to test more specialized areas such as knowledge of synonyms, antonyms, etc.

b. Contextual meanings (4-5 questions)
   (1) Students define the underlined word in a sentence copied from the text in which the meaning of the word is given.
   (2) Students define the underlined word in a paragraph copied from the text in which the meaning is derived using the context of the whole paragraph.

c. Word recognition and word attack (7-8 questions)
   (1) Students identify root words and derivatives.
   (2) Students identify and give the meanings of common content prefixes and suffixes.
   (3) Students change the part of speech of given words.

4. Comprehension (11-12 questions)

Select a passage of 300-500 words from the textbook to be used in the class and count the exact number of words. (This information will be needed in item 6 below on reading rate.) This passage should be compiete in itself and of an appropriate level of difficulty. Be aware that in the case of an anthology, there will be a range of difficulty among various chapters or sections. The passage selected should be representative of the average difficulty of the text. Design comprehension questions which represent a variety of comprehension skills and which assess the student's ability to respond to all levels of questioning. Refer to the list of reading skills you checked on page 3 as a basis for constructing these questions. A few suggestions are listed below.

a. Noting main ideas
   (1) Questions should deal with the major ideas presented.
   (2) Students can be asked to demonstrate their understanding of the author's organization by listing the main ideas in sequence as major parts (I, II, III) of an outline.

b. Recalling pertinent supporting details
   (1) Questions should deal with specific important information about the major ideas or events.
   (2) Understanding organization can be tested by asking the student to list these details under the appropriate main ideas (I, II, III) identified above.

c. Noting the sequence of ideas or events.

d. Drawing conclusions and inferences. These questions should ask students for information not specifically stated in the text.

e. Thinking critically. These questions should ask the students to make a judgment about the material read. This could be done in terms of whether the author demonstrates a particular bias, whether the proposed solution to a problem seems realistic, or whether additional information is needed before a conclusion can be drawn.

f. Applying information. These questions should ask students to apply the information learned to a present day situation of which they have knowledge or in which they may be involved.

5. Skimming to locate information (2-5 questions)

Choose a two-page selection different from the one for comprehension and speed. Design questions to encourage the pupil to skim quickly for specific information, such as main ideas, dates or names. The time allotted for skimming will depend upon the difficulty of the material, the passage length and the number of questions asked.

6. Reading rate.

Ask students to time their readings on the comprehension passage if this type of information is needed. A classroom wall clock will enable students to record their finishing time on the first reading. Give the signal to begin reading as a new minute on the clock begins. Record the starting time. Tell students to record the minute and second at which they come to the end of the passage and to then proceed to answer the questions. You can help them determine their speed after the rest of the inventory is finished.

Examples of Inventory Items

1. Parts of book

a. If you wanted to locate a map of Southern Africa, where could you locate this information quickly? (List of maps and illustrations)
b. In what part of the book can you find the meaning of a word you may not know? (Glossary)
c. On what page would you find more information about "The Law of Energy?" (Index)

2. Reference Skills

a. What reference material would you use to locate the following information:

--two recent magazines in which you would find information about population growth? (Readers' Guide)
--the number of books in the library that are written by Jack London? (Card Catalogue)
--the name of the highest mountain in the state of Washington? (Atlas, Encyclopedia)

b. Look at the map on page ___ of your textbook. What does this map show you about South America?

c. Look at the chart on page ___ of your textbook. Which countries are the five top oil producers in the world? Which countries have the largest oil resources?

3. Vocabulary Skills

a. Define the term "integer" in your own words. (Gen. Voc.)

b. Use the word "revolution" in a sentence which clearly shows its meaning. (Gen. Voc.)

c. What is meant by the underlined word in the following sentence? Use the context of the sentence to help you. (Context)
Between the two mountain ranges is a high, broad plateau called the altiplano.

d. What is meant by the underlined word in the following paragraph? Use the context of the paragraph to help you. (Context) (Choose an appropriate paragraph from the text)

e. What is the meaning of the word "moraine" as it is used on page ___, column ___, line ___? (Context using textbook)

f. Divide the following words into syllables: Metropolitan, urbanism, ghetto, megalopolis, suburbs.

g. What does the prefix "un" mean as used in "undemocratic?"

h. Define the following words: communist, socialist, Buddhist. Tell how the suffix "ist" influences their meanings.

4. Comprehension

a. How did the location of towns affect their growth into cities? (Main Idea)

b. What are four of the properties of matter? (Details)

c. List four major causes of the War Between the States in the order in which they occurred. (Sequence)

d. Based on what you have read, if a geologist saw a valley glacier for the first time, what might he look for to determine if the glacier was advancing, retreating, or standing still? (Inference)

e. What might you do in your own home which might help to conserve energy? (Application)

5. Skimming another selection

   a. What routes did the early American Indians follow when they first came to the American continents? (Map reading)
   b. What area is known as "Middle America?" (Italicized vocabulary word)
   c. List three facts that describe the Mayan religion. (Using bold faced headings to locate information quickly)
   d. In what year was the Mayan civilization at its peak? (Skimming for dates and numbers)

## Administering the Inventory

In administering the Textbook Usage Inventory, teachers should explain the purpose of the inventory to the students. Present the inventory as an effort on the part of the teacher to become aware of the particular needs of that individual class. Assure students that no grade will be assigned on the inventory, but that the results will be shared with them. These results can help them identify some of the skills that will be needed in the course of the year. They can identify some of those areas in which they may need assistance with the reassurance that the teacher also is aware of these and willing to give assistance. An outline of the steps in administering the inventory is given below. Modify it according to those particular parts you decide to include in your particular model.

1. Discuss the purpose of the inventory with the students, explaining the skills that are being measured.

2. Have the students use their textbooks to answer the questions on the parts of the book and reference materials (where maps, charts, etc., are used from the book).
3. If rate is to be determined, explain how this will be done and demonstrate how to record the stopping time by writing down the minute and second from the clock. Several trial runs may be helpful.

4. Define the chosen passage for the comprehension and rate section and have the students clearly mark the beginning and ending points in the textbook. Introduce the reading selection and establish the necessary background, giving the students a question to guide their reading.

5. Have all students begin to read silently at the beginning of a new minute on the clock. Record the time they began. When they finish reading, they should record their ending time, close their books and proceed to answer the vocabulary and comprehension questions.

6. For skimming, have the students turn to a new selection in their books. Indicate the beginning and ending points. Instruct the students that they should not read the selection word-for-word, but should skim quickly for the information to answer the questions which have been given to them on a separate sheet of paper. Do not tell the students how much time has been allowed. Tell them to work as quickly as possible.

7. To calculate the reading rate, tell the students the starting time for the comprehension passage. Ask them to subtract this time from the time that they recorded when they finished reading the section. Convert the resulting minutes and seconds into seconds only. Divide the total number of words in the passage into the total number of seconds to determine the number of words read per second. Multiply the answer by 60 in order to determine the number of words read in a minute. In some instances, you may prefer to determine this yourself.

8. The inventory evaluation can be used as a classroom activity in which each student scores his own paper. In this case, you must establish this procedure as a valuable tool for student insight into his/her own strengths and weaknesses, rather than as a test. Discussion of items can provide effective instruction in some areas which do not require lengthy lessons.

## Evaluating the Inventory

This group-administered inventory does not establish a grade level score. Anyone scoring above 90% on the comprehension questions may be considered to be reading material too easy for him/ her. Anyone scoring below 65% may be considered to be reading material that is too difficult. If the material is suitable, the scores should range between 70% and 90%. A student is considered to be deficient in any one specific skill if he/she answers more than one question incorrectly when there are at least three questions measuring a specific skill.

Express the score for the parts of the book and reference portions of the inventory in terms of competency (+) or non-competency (-). Provide instruction to those lacking competence in these.

The scoring for the comprehension portion of the inventory can yield two kinds of information. First, based on the criteria percentages indicated above, you can determine if a student is functioning effectively in the textbook. Second, you can analyze the student's comprehension strengths and weaknesses. By coding the types of questions asked, you can determine if a student can successfully answer questions of main idea, details, vocabulary, sequence, cause and effect, inferences, critical thinking, or other types appropriate to that content. By noting student weaknesses on specific types of questions, additional attention can be given to developing these types of comprehension during discussions or small group work.

In accordance with the diagnostic/prescriptive concept of teaching, accurate records should be made of a student's performance. A class profile on which a plus or minus is recorded for student performance on each skill can give a quick overview of student needs. Set aside several pages in your grade book to insure that this information is readily available. Instructional decisions can then be based upon this data. A sample of a record-keeping form is given on the next page.

Teachers may wish to make up three inventories, each having different questions and different comprehension and rate passages. If several teachers work together, this can be easily accomplished over the year's time. By doing so, you will have material with which to retest for effectiveness of skill instruction during the year.

| STUDENTS | TABLE OF CONTENTS | INDEX | GLOSSARY | INTRO. PARAGRAPH | MAPS | GRAPHS | CARD CATALOGUE | READERS' GUIDE | WHO'S WHO | ATLAS | ENCYCLOPEDIA | BASIC VOCABULARY | CONTEXT CLUES | BASIC ROOTS | BASIC PREFIXES | MAIN IDEAS | SEQUENCING | COMPARING | SEEING CAUSE/EFFECT | EVALUATING | APPLYING INFORMATION | SKIMMING | RATE |
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